

Application No. 10/766,224

File No. MICI 1004-2

In the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Cancel Claims 1-8.

- 1 9. (Original) A laser amplifier, comprising:  
2 a gain medium;  
3 a polarization rotator;  
4 a passive polarizer;  
5 a plurality of reflectors configured to define an optical path through the gain  
6 medium, the passive polarizer, and the polarization rotator; and  
7 a phase conjugator configured to receive a beam from the optical path after the  
8 pulse has proceeded one or more transits through the optical path, the phase conjugator  
9 further configured to return the beam with reversed phase to the optical path to proceed  
10 an equal number of transits of the optical path in an opposite direction before exiting the  
11 optical path; and  
12 a relay telescope having a telescope focal point, between the gain medium and the  
13 passive polarizer, which is used for relaying images between the gain medium and a  
14 location in the optical path near the passive polarizer, having a baffle near said telescope  
15 focal point to block off angle beams, the baffle comprising a solid member having an  
16 optically transparent channel, the optically transparent channel having openings on  
17 opposite ends of the solid member, and a waist within the solid member near said  
18 telescope focal point, said waist being smaller than said openings, and said channel  
19 having sides which taper near said waist.
- 1 10. (Original) The system of claim 9, wherein said channel has sides which taper near  
2 said waist at a grazing angle in a range of about 1 to 10 degrees.

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1 11. (Original) The system of claim 9, wherein said channel comprises a hollow in said  
2 member.

1 12. (Original) The system of claim 9, wherein said optical cavity is aligned with walk  
2 off so that stray beams that transit the optical cavity more times than specified are  
3 blocked by said baffle.

1 13. (Original) The system of claim 9, wherein said optical cavity is aligned with walk  
2 off so that stray beams that transit the optical cavity more times than specified are  
3 blocked by said baffle.

1 14. (Original) The system of claim 9, wherein said location in the optical path is  
2 adjacent the polarization rotator and the passive polarizer.

1 15. (Original) The system of claim 9, including a second relay telescope in the optical  
2 path to relay images between said location and the phase conjugator.

1 16. (Original) The system of claim 9, including a second relay telescope in the optical  
2 path to relay images between said location and the phase conjugator, the second relay  
3 telescope having a baffle which blocks off angle beams.

1 17. (Original) A laser amplifier, comprising:  
2 a gain medium;  
3 a polarization rotator;  
4 a passive polarizer;  
5 a plurality of reflectors configured to define an optical path through the gain  
6 medium, the passive polarizer, and the polarization rotator; and  
7 a phase conjugator configured to receive a beam from the optical path after the

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8 pulse has proceeded one or more transits through the optical path, the phase conjugator  
9 further configured to return the beam with reversed phase to the optical path to proceed  
10 an equal number of transits of the optical path in an opposite direction before exiting the  
11 optical path; and  
12 a relay telescope having a telescope focal point, between the gain medium and the  
13 passive polarizer, which is used for relaying images between the gain medium and a  
14 location in the optical path near the passive polarizer, the relay telescope comprising  
15 a first relay lens;  
16 a second relay lens;  
17 a vacuum chamber between the first and second relay lenses, the first and  
18 second relay lenses focusing beams at a common focal point within the  
19 vacuum chamber;  
20 a kinematic mount within the vacuum chamber, adapted to secure beam baffles  
21 near the common focal point; and  
22 an access port on the vacuum chamber, adapted for insertion and removal of  
23 beam baffles.

1 18. (Original) The system of claim 17, including a baffle adapted to be mounted in said  
2 kinematic mount, said baffle comprising a solid member having an optically transparent  
3 channel, the optically transparent channel having openings on opposite ends of the solid  
4 member, and a waist within the solid member near said telescope focal point, said waist  
5 being smaller than said openings, and said channel having sides which taper near said  
6 waist.

1 19. (Original) The system of claim 17, including a baffle adapted to be mounted in said  
2 kinematic mount, said baffle comprising a solid member having an optically transparent  
3 channel, the optically transparent channel having openings on opposite ends of the solid  
4 member, and a waist within the solid member near said telescope focal point, said waist

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5 being smaller than said openings, and said channel having sides which taper near said  
6 waist at a grazing angle in a range of about 1 to 10 degrees.

1 20. (Original) The system of claim 17, including a baffle adapted to be mounted in said  
2 kinematic mount, said baffle comprising a solid member having a channel defined by a  
3 hollow in said member, the channel having openings on opposite ends of the solid  
4 member, and a waist within the solid member near said telescope focal point, said waist  
5 being smaller than said openings, and said channel having sides which taper near said  
6 waist.

1 21. (Original) The system of claim 17, including a baffle adapted to be mounted in said  
2 kinematic mount, said baffle comprising a solid member having a channel defined by a  
3 hollow in said member, the channel having openings on opposite ends of the solid  
4 member, and a waist within the solid member near said telescope focal point, said waist  
5 being smaller than said openings, and said channel having sides which taper near said  
6 waist at a grazing angle in a range of about 1 to 10 degrees.

1 22. (Original) The system of claim 17, including a far-field, tapered baffle adapted to be  
2 mounted in said kinematic mount, said far-field, tapered baffle comprising a solid  
3 member having an optically transparent channel, the optically transparent channel having  
4 openings on opposite ends of the solid member, and a waist within the solid member near  
5 said telescope focal point, said waist being smaller than said openings, and said channel  
6 having sides which taper near said waist; and  
7 a far-field alignment baffle adapted to be mounted in said kinematic mount, said  
8 alignment baffle comprising a pinhole aperture.

1 23. (Original) The system of claim 17, including a near-field baffle mounted adjacent  
2 one of said first and second relay lenses.

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1 24. (Original) The system of claim 17, including a first near-field baffle mounted  
2 adjacent said first relay lens, and a second near-field baffle mounted adjacent said second  
3 relay lens to block stray beams.

1 25. (Original) The system of claim 17, wherein said optical cavity is aligned with walk  
2 off so that stray beams that transit the optical cavity more times than specified are  
3 blocked by a baffle in said kinematic mount.

1 26. (Original) The system of claim 17, wherein said location in the optical path is  
2 adjacent the polarization rotator and the passive polarizer.

1 27. (Original) The system of claim 17, including a second relay telescope in the optical  
2 path to relay images between said location and the phase conjugator.

1 28. (Original) The system of claim 17, including a second relay telescope in the optical  
2 path to relay images between said location and the phase conjugator, the second relay  
3 telescope having a baffle which blocks off angle beams.

1 Cancel Claims 29-36.

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